

REMARKS

I. Summary of Office Action

Claims 1-3 and 17-40 are pending in this case.

Claims 1-3 and 36 were rejected under
35 U.S.C. § 102(b) as being anticipated by Kronrod et al.
U.S. Patent Application Publication 2002/0050827
(hereinafter "Kronrod").

Claims 17-19, 22 and 25 were rejected under
35 U.S.C. § 103(a) as being obvious over Armstrong U.S.
Patent No. 5,451,903 (hereinafter "Armstrong") in view of
Kronrod.

Claim 20 was rejected under 35 U.S.C. § 103(a)
as being obvious over Armstrong in view of Kronrod and
further in view of Jaussi et al. U.S. Patent Application
Publication 2003/0006747 (hereinafter "Jaussi").

Claims 21, 23 and 24 were rejected under
35 U.S.C. § 103(a) as being obvious over Armstrong in
view of Kronrod and further in view of Gist et al. U.S.
Patent No. 5,687,330 (hereinafter "Gist").

II. Summary of Applicant's Amendments

Applicant notes with appreciation the
indication of allowable subject matter in claims 37-40.

Applicant has amended claims 1, 17, 22, 23 and
37 and has added new claims 41 and 42 to more
particularly point out and distinctly claim the subject

matter than applicant regards as the invention. No new subject matter has been added.

III. Applicant's Reply to the Rejections under 35 U.S.C. § 102(b) over Kronrod

Applicant's invention, as defined by independent claim 1, is directed towards a method for determining a current supplied by an integrated circuit. More particularly, the amount of current is determined using various impedances located on the integrated circuit.

Kronrod describes systems and methods for measuring the power of an integrated circuit on a printed circuit board ("PCB") (Kronrod, abstract and column 1, paragraph 13 to column 2, paragraph 15). The power is measured by measuring characteristics of a power strip connected between a power source and the integrated circuit. Specifically, the power consumed by the integrated circuit is calculated by multiplying the resistance of the power strip by the voltage of a power source and the voltage drop across the power strip (Kronrod, page 2, paragraph 28 - page 3, paragraph 33).

The Examiner stated that "Kronrod et al. discloses [sic] a method for determining a current supplied by an integrated circuit." Kronrod, however, only determines power. Applicant's invention, as defined by claim 1, requires the determination of a current.

Therefore, applicant respectfully requests that the Examiner's rejection of claim 1 under 35 U.S.C. § 102(b) be withdrawn.

Furthermore, the Examiner stated that Kronrod discloses "comparing a voltage drop across a first impedance on the integrated circuit with a voltage drop across a second impedance on the integrated circuit." Kronrod, however, at most only discusses measuring voltage drops across a power strip and a calibration strip. Kronrod does not show or suggest comparing voltage drops across two impedances as defined by applicant's claim 1.

Moreover, the Examiner stated that Kronrod discloses "processing information obtained in the determining and comparing steps to obtain a value for the supplied current." Since Kronrod only measures power consumed and at most only discusses measuring voltages across different strips, Kronrod does not show or suggest processing information in the determining and comparing steps to obtain a value for a supplied current as defined by applicant's claim 1.

For at least the above reasons, applicant respectfully submits that independent claim 1, and any claims dependent therefrom, is allowable over Kronrod.

IV. Applicant's Reply to the Rejections under 35 U.S.C. § 103(a) over Armstrong in view of Kronrod

Applicant's invention, as defined by independent claim 17, is directed towards a circuit that determines a current supplied by an integrated circuit. A first and a second measurement device are used to measure various voltage drops across different impedances on the circuit. The supplied current is then calculated by processing circuitry based on the voltage drops measured by the measurement devices.

Armstrong refers to a low supply voltage output driver. Depending on the external load impedance, the output driver functions as either a voltage follower or a single-ended push-pull circuit that provides a low distortion output under low supply voltage conditions (Armstrong, abstract and col. 1, lines 45-50).

Armstrong and Kronrod, used either alone or in combination, does not show or suggest applicant's invention of claim 17 of a first measurement device coupled to both a modulation and sensing impedance and processing circuitry configured to calculate current. The Examiner stated that Kronrod discusses "a first measurement device ... a second measurement device ... and processing circuitry" (Office Action, page 4).

Kronrod, however, does not show or suggest processing circuitry that is configured to calculate

current. As stated, Kronrod determines power. For this reason, Kronrod does not include processing circuitry as defined by applicant's claim 17.

Furthermore, Kronrod does not show or suggest applicant's invention of claim 17 of a first measurement device that is coupled to both a modulation and sensing impedance. Kronrod discusses two distinct circuits (A/D converters) that are each connected to a separate impedance. Therefore, Kronrod does not show or suggest the first measurement device as defined by claim 17.

In addition, applicant respectfully submits that there is no motivation to combine Kronrod with Armstrong. Particularly, the Examiner stated that:

It would have been obvious ... to modify Armstrong's system to include a first measurement device ... a second measurement device ... and processing circuitry ... as taught by Kronrod [...] in order to output corresponding digital signals (V_2' and V reference) which may be input into CPU 220 ... to perform power calculations.

(Office Action, item 7)

In Kronrod, A/D converters are used to measure the voltage drop across wide, copper power strips. Kronrod does not discuss coupling A/D converters to resistors. As a result, there is no motivation to couple Kronrod's A/D converters to Armstrong's resistors. In this manner, there is no motivation to couple one of Kronrod's A/D converters to two of Armstrong's resistors or to even couple Kronrod's A/D converters to Armstrong's resistors

to determine the current supplied by the integrated circuit.

In fact, without objective evidence of a motivation to combine Armstrong with Kronrod, the Examiner appears to be employing hindsight reconstruction, which is insufficient as a matter of law. Gambro Lundia AB v. Baxter Healthcare Corp., 42 U.S.P.Q.2d 1378, 1383 (Fed. Cir. 1997).

For at least the above reasons, applicant respectfully submits that independent claim 17 is allowable over Armstrong in view of Kronrod. Accordingly, claims 18-25 are allowable because claims 18-25 depend from allowable claim 17.

V. Applicant's Reply to the Claim Objections

The Examiner objected to claims 37-40 as being dependent from rejected independent claim 1, but indicated that the claims would be allowable if they were rewritten in independent form. Applicant has rewritten claim 37 -- from which claims 38-40 depend -- as an independent claim. Accordingly, applicant respectfully submits that claims 37-40 are allowable.

VI. Conclusion

For the reasons set forth above, applicant respectfully submits that this application is in

condition for allowance. Reconsideration and prompt
allowance of this application are respectfully requested.

Respectfully submitted,


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